

## ABSTRACT OF THE DISCLOSURE

Methods for determining the location of a satellite positioning system receiver by determining an estimated location of the receiver (200), transmitting the estimated location of the receiver to a network, determining a reference altitude of the receiver at the network based upon the estimated location of the receiver (210), and determining a new location of the receiver based upon the reference altitude of the receiver (220). In some embodiments, terrain slope is determined at the estimated location for use in updating the estimated location. In some embodiments, satellite information and weighting factors used to estimate receiver location along with other parameters are utilized to update the estimated location.